Benefits associated with early detection and treatment of RA with biologics warrant closer scrutiny to alleviate patient burden.

PMS71
EXPLORING THE DIFFERENCES OF DISEASE, HEALTH STATUSES AND HEALTH UTILIZATION BETWEEN ELDERLY WITH AND WITHOUT BONE DISORDERS IN TAIWAN
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OBJECTIVES: Given the evidence showed that bone disorders were one of the top three prevalent chronic conditions among the elderly in Taiwan, the aim of this study was to explore the different characteristic, health status, health care utilization between those who suffered from bone disorders or not among the elderly in Taiwan. **METHODS:** The data used for this study was obtained from the 2005 National Health Interview Survey (NHIS) databases in Taiwan. The interviewees who reported to have "osteoporosis" or "osteoarthritis" were grouped into bone disorder group. Otherwise were non-bone disorder group. The appropriate descriptive statistics with sampling weights and inferential analysis approaches were applied on those responses for basic demographics, perceived health status, and self- report health care utilization. **RESULTS:** Of 2727 elderly interviewees in 2005 NHIS, 35.2% reported to have bone disorders and their demographic characteristics were not statistically significant different from the other group, except the proportion of female. (65.0% *vs* 43%). While bone disorder group tended to have more chronic conditions than non-bone disorder group, they were also more likely to report fall experiences and worse health status Further, they tended to consume more utilization of emergency care, hospital stay , dental care and Traditional Chinese medicine (TCM) service in past one year (all *p*values <0.05) than otherwise. **CONCLUSIONS:** Elderly with and without bone disorders in Taiwan were different not only in the demographic characteristics but also in their diseases, health status and health care utilization, including TCM service. Further comprehensive analyses would be needed to explore the extent of contributing factors on the health care utilization among elderly patients suffered from bone disorders.

PMS72
ECONOMY WITH THE NEW BIOLOGICAL AGENTS TO TREAT RHEUMATOID ARTHRITIS IN BRAZIL: THE MINISTRY OF HEALTH PERSPECTIVE
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OBJECTIVES: Until 2012, only the biological agents adalimumab, etanercept and infliximab were available in the Brazilian public health system (SUS) to treat Rheumatoid Arthritis (RA). Since July 2013, abatacept, certolizumab, golimumab, rituximab and tocilizumab were also made available, according to the treatment algorithm presented in the Brazilian Guidelines. The aim of this study is analyze the budget impact of these new technologies, by the MoH perspective. **METHODS:** The number of patients with RA treated with the new biologicals in the SUS was estimated by the ratio between the amount dispensed in 2013 and its recommended dosage. The data about the older biological agents were extracted from the SUS database (Datasus). The drug acquisition costs were used to calculate the relative treatment cost among the different therapeutic alternatives (current values; exchange rate: US$ 1 = R$ 2.36). The budget impact was calculated by comparing the new biologic treatment costs (abatacept, certolizumab, golimumab, rituximab and tocilizumab) and a potential costs in a hypothetical scenario without new agents available (only considering adalimumab, etanercept and infliximab). **RESULTS:** From July to December 2013, 3,959 patients with RA were treated with new biologicals, implying a total spent of US$ 18,905,770.06. The mean monthly cost of treatment per patient was US$ 759.91, with higher values for abatacept (US$ 1,290.56) and lower for rituximab (US$ 579.10). If all of these patients were treated with the older agents, the total costs would sum up to US$ 41,497,979.83. Thus, the offer of new drugs in the SUS has saved a total of US$ 25,592,209.32 (54.44%) in 2013. **CONCLUSIONS:** Offering new biologicals for RA allowed the SUS to expand the access to medicines and treatment of patients refractory to anti-TNF, also resulting potential savings for the SUS resources.

PMS73
BIOSIMILARS: FRIENDS OR FOE FOR PAYERS, PHYSICIANS AND MANUFACTURERS?
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OBJECTIVES: Following the recent approval of infliximab in the EU, the objectives were to understand EU payer and physicians expectations of the new biosimilars. How could biosimilars influence payer and physician decision-making and what must manufacturers do to achieve success? **METHODS:** Secondary research to understand payer drivers & local decision-making processes followed by 1:1stakeholder interviews with 12 EU physicians on decision-making committee's and 6 EU Senior payers. **RESULTS:** Awareness of biosimilars amongst physicians is currently low. Just 8% of physicians questioned in the EU spontaneously mentioned biosimilars as products in development, with Remsima/Inflectra the only biosimilar mentioned specifically by name. Only 35% of the physicians said they would definitely consider prescribing biosimilars for Rheumatoid Arthritis within one year of launch. Payers are anticipating a 30% saving verses the originator drug. Payers warned that manufacturers need to treat biosimilars as if they were branded medicines, and ensure a proper commercial strategy. **CONCLUSIONS:** The recent approval of Hospira's Inflectra (infliximab) may mark a turning point for biosimilars in Europe. While follow-on biologics have been on the EU market since 2006, Inflectra was the first such approval for a monoclonal antibody – larger, more complex molecules than the 14 biosimilars previously cleared by the EMA. The broader context is that the exhaustion of patent and other intellectual-property rights on originator biologicals over the next decade affords an unparalleled opportunity for biosimilars to enter the market and boost competition in the sector. However, manufacturers will have to ensure that biosimilars are sensibly price and also put proper sales and marketing support behind the product to address the low awareness amongst physicians and local payers.

PMS74
COST-SHARING AND USE OF BIOLOGIC THERAPIES IN MEDICARE PATIENTS WITH RHEUMATOID ARTHRITIS
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OBJECTIVES: Biologics represent major advances in the treatment of rheumatoid arthritis (RA) with eight agents available on the market by 2010. In the Medicare program, 3 agents are Part B covered infusibles, while the remaining five are Part D covered self-injectables. This study examines the association between cost sharing and the initiation and choice of RA biologic (Part D vs. Part B) in Medicare beneficiaries. **METHODS:** Fee-for-service beneficiaries with continuous Part D coverage and RA (ICD-9-CM 714.xx) in the 2010 Medicare 5% files (N=12,923) were examined. Dependent variables included initiation of any biologic among all RA patients and the use of a Part D (vs. Part B) biologic among biologic users. To isolate the effect of the specialty tier cost-sharing (from that of the donut hole) we further identified whether a Part D biologic was first initiated in the initial coverage limit (ICL) phase or not. The key independent variable was the beneficiary's low income subsidy (LIS) status i.e. non-LIS vs. full-LIS as a proxy for higher (initially 25% to 35% coinsurance followed by donut hole) vs. lower cost-sharing ($3-$5 copay), respectively. Multivariate logistic regressions with robust clustered standard errors at the plan level were estimated. **RESULTS:** Overall RA biologic use was 17% in the sample (10 % Part B and 7% Part D biologics). Compared to full-LIS patients, non-LIS patients had lower odds of initiating any RA biologic in the year (OR 0.84, 95% CI 0.75-0.94). Among biologic users, non-LIS patients were less likely to use a Part D biologic in the entire year (OR 0.19, 95% CI 0.15-0.24) and in the ICL-phase (OR 0.22, 95% CI 0.17-0.28). **CONCLUSIONS:** High cost sharing due to specialty tiers and the coverage gap under Part D may be associated with non-LIS patients foregoing use of any RA biologic or substituting with infusible biologics under Part B.

PMS75
REAL-WORLD TREATMENT BEHAVIOR AMONG PATIENTS WITH DUPUYTREN'S CONTRACTURE: A HEALTH INSURANCE CLAIMS-BASED ANALYSIS
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OBJECTIVES: Real-world treatment behavior data among patients with Dupuytren's contracture (DC) with a palpable cord are limited. The objective of this study was to assess real-world treatment behavior following Xiaflex®(collagenase clostridium histolyticum) or fasciectomy among adult DC patients. **METHODS:** A retrospective cohort analysis was conducted using the IMS LifeLink™ Health Plan Claims Database. Patients ≥18 years between 2/1/2010–12/31/2011, with a treated finger/joint with Xiaflex or fasciectomy (index event), who were continuously enrolled both in the 12-month pre- and post-index periods, and had ≥1 DC diagnosis code in the pre-index period were included. A second treatment was defined as having occurred following a gap of ≥30 days from the index event. Descriptive statistics were reported and logistic regression and Cox Proportional Hazards models were used to adjust for baseline differences. **RESULTS:** 309 Xiaflex/1,264 fasciectomy patients were included. Xiaflex patients were significantly older than fasciectomy patients (64.28 vs. 61.50 years; p<0.0001). Majority of all patients were male. Fasciectomy cohort had a greater proportion of patients with a second treatment than Xiaflex cohort (54% vs. 14%; p>0.05). Nearly all patients received Xiaflex as their second treatment (99.12% vs.100% respectively). Demographic and clinical characteristics of patients receiving a second treatment among both cohorts were similar to those who did not receive a second treatment. After adjusting for baseline confounders, fasciectomy patients were 8.3-times more likely to have a second treatment compared to Xiaflex patients (OR: 8.28; 95% CI: 5.79-11.85; p<0.0001). Older patients, patients with hyperlipidemia, hypothyroidsm, higher Charlson Comorbidity Index scores, and higher pre-index health care costs had a greater hazard of having a second treatment (all comparisons p<0.05). **CONCLUSIONS:** Xiaflex was used as a second treatment among nearly all DC patients. As such, fasciectomy patients may be candidates to be replaced by Xiaflex to reduce the risk and costs of a second treatment.

PMS76
DRUG UTILIZATION PATTERNS FOR RHEUMATOID ARTHRITIS
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OBJECTIVES: Various medications are commonly used to manage Rheumatoid Arthritis (RA). This study examined drug utilization patterns and factors associated with the use of medications by RA patients. **METHODS:** Data from the 2006-2010 National Ambulatory Care Survey (NAMCS) and the outpatient department component of the National Hospital Ambulatory Medical Care Survey (NHAMCS) were used to examine the RA related ambulatory visits. RA medications were classified as NSAIDS and analgesics, corticosteroids, and disease modifying Antirheumatic drugs (DMARDs). Bivariate chi-square analysis and multiple logistic regression analysis were performed to evaluate the factors associated with prescribing of RA medications. SAS survey procedures that adjust for the complex sampling procedure of national surveys were used to conduct bivariate and multivariate analyses. **RESULTS:** An average of 3.57 million (0.33%) visits was made by patients with RA from 2006 to 2010. Majority of these visits were made by females (76.75%), Whites (88.50%) and individuals aged 18-64 years old (61.53%). More than two third of the RA patients were prescribed anti-rheumatic

drugs (70.75%). The most commonly prescribed anti-rheumatic drugs were NSAIDs and Analgesics (75.60%), DMARDs (20.40%) and Corticosteroids (4.00%). Multiple logistic regression analysis showed that females (OR: 0.55; 95% CI: 0.32-0.95), individuals aged group 18 to 64 years (OR: 0.48; 95% CI: 0.29-0.78) were less likely to receive anti-rheumatic drugs, whereas those seeking care from rheumatologists (OR: 4.38; 95% CI: 2.19-8.77) and those with multiple previous visits (OR: 1.43; 95% CI: 1.26-1.62) were more likely to receive anti rheumatic drugs. **CONCLUSIONS:** Most (7 out of 10) visits for the RA involved use of anti-rheumatic drugs. Drug use patterns varied across age, gender, physician specialty, and previous use of health care. Further research is needed to evaluate the variation across drug classes for RA.

PMS77

RELATIONSHIP BETWEEN THE DURATION OF RHEUMATOLOGY PRACTICE EXPERIENCE AND LIKELIHOOD OF USE AND PERCEPTION TOWARDS BIOSIMILARS IN RHEUMATOID ARTHRITIS (RA) ARENA

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OBJECTIVES: To assess the relationship between duration of rheumatology practice experience and rheumatologist perception towards biosimilars and the likelihood of use of biosimilars to manage RA patients in the European Union (EU), Brazil, Japan and China. **METHODS:** A multi-country cross-sectional survey was conducted in top-5 EU countries (UK/Germany/Spain/France/Italy), Brazil, Japan and China in April/May 2013 using an online physician panel in the respective geographies; rheumatologists were randomly selected for survey participation to be geographically representative in select countries/regions. Surveys assessed the rheumatologist perceptions of biosimilars in terms of factors that would prevent them from using biosimilars among their biologic-eligible RA patients, and their likelihood of use of biosimilars. Summary statistics are reported across the markets, stratified by years of rheumatology-practice-experience. **RESULTS:** 173 rheumatologists participated in the survey (5EU-58%, Brazil-23%, Japan-11% and China-9%); years of experience practicing rheumatology (across the markets) was: <=10yrs:26%, 11-20yrs:42%, >20yrs:32%. Mean RA patient-volume/year based on rheumatology-practice-experience was: <=10yrs:264, 11-20yrs:323, >20yrs:270. Likelihood of prescribing a biosimilar product to eligible RA patients differed by rheumatology-practice-experience (<=10yrs/11-20yrs/>20yrs): definitely-13%/13%/5%; highly likely-27%/42%/39%; may be/not sure-44%/36%/38%; less/not likely-16%/10%/18%. Perceived duration of use of biosimilars in a small group of patients before prescribing it in larger scale was (by rheumatology-practice-experience <=10yrs/11-20yrs/>20yrs): 1-2yrs:53%/56%/43%, 3-5yrs:16%/11%/14%, 6-10yrs:2%/1%/2%, >10yrs:4%/4%/5%; not-sure:24%/28%/36%. Key factors noted by rheumatologists that would prevent them from using biosimilars were (by rheumatology-practice-experience <=10yrs/11-20yrs/>20yrs): Doubts in similarity to original molecule(56%/63%/59%), inadequate safety/efficacy profile/data(47%/57%/52%), lack of long-term data(42%/39%/57%), lack of national guidelines recommending the use of biosimilars(40%/38%/34%), lack of data from local country/market(40%/31%/25%), lack of trust/confidence in manufacturer(24%/25%/27%). **CONCLUSIONS:** Rheumatologists perceptions varied based on their practice-experience; those with <=10yrs of practice-experience reported the least likelihood of prescribing biosimilars, and a higher proportion of them cited national treatment guidelines and lack of data from local country/market among key reasons preventing biosimilar use.

PMS78

COMPARISON OF CLINICAL CHARACTERISTICS OF PATIENTS WITH RHEUMATOID ARTHRITIS (RA) RECEIVING A BIOLOGIC MONOTHERAPY AND BIOLOGIC COMBINATION THERAPY IN THE UNITED STATES

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OBJECTIVES: To assess the clinical characteristics of patients with RA who received a biologic monotherapy (Mono) and biologic combination therapy (Combo: Biologic+DMARDs) in the US. **METHODS:** A multi-country multi-center medical chart-review study of RA patients was conducted between Nov2012-Jan2013 among physicians (mainly rheumatologists) in hospitals and private practices to collect de-identified data on patients who were recently treated with a biologic as part of usual care. Physicians were screened for duration of practice (3-30 yrs) and patient volume (incl. >2RA biologic patients/week) and recruited from a large panel to be geographically representative of the US. Eligible patient charts (>5) were randomly selected from a sample of prospective patients visiting each center/practice during the screening period. Physicians abstracted patient diagnosis, treatment patterns/dynamics and patient symptomatology/disease status. This analysis focused on patients currently on Mono and Combo biologics. **RESULTS:** 919 eligible RA patients were included in the analysis; Mono patients: 353 (38%), Combo patients: 566 (62%). Patient characteristics included (Mono/Combo): mean age:47.4/57.8; female:50%/61%; mean weight(Kg):75.7/78.0; top-3 comorbidities: obesity(17%/20%), dyslipidemia(14%/22%, depression/anxiety:9%/16%. Time between RA diagnosis and recent office visit (Mono/Combo):77.1/78.5months; number of biologic-lines of therapy received (Mono/Combo): 1st-line-80%/70%, 2nd-line-15%/20%, >=3rd-line-5%/11%; top-4 biologics used across the two patient groups were: adalimumab/etanercept/infliximab/abatacept. Among patients with data-availability, current lab & disease-severity measures were (Mono/Combo): ESR(mm/h)-23.7/25.0; CRP(mg/dl)-2.6/3.4; rheumatoid factor (positive%):38%/54%; anti-CCP (positive%):31%/45%; overall disease-stage per physician-judgment: mild-67%/62%, moderate-29%/33%, severe-4%/5%; mean-HAQ:0.7/0/9; mean-DAS28:2.3/3.0; mean tender joint count: 2/3/3.4; mean swollen joint count:1.4/2.5. **CONCLUSIONS:** In this cohort of RA patients in the US, over 60% of Mono and Combo patients had mild disease per physician judgment and a majority of them were on 1st line treatment; lab measures and joint counts indicated only slightly higher disease burden among Combo patients. Impact of specific biologic treatments on observed patterns and the need for therapeutic sequencing may warrant scrutiny.

PMS79

WHAT FACTORS ARE ASSOCIATED WITH INCREASING CHARGES FOR MAJOR JOINT REPLACEMENTS BETWEEN 2008 AND 2011?

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OBJECTIVES: This study measured the association between hospital characteristics and changes in hospital charges for major joint replacement (MJR). **METHODS:** 2008 and 2011 hospital charge and reimbursement data were obtained from MJR inpatient Medicare claims. Multivariate linear regression models were used at the hospital level to regress the percent change in hospital charges on hospital characteristics which included hospital demographics and MJR patient summary measures. Independent variables represented both baseline 2008 and change in value/status quantities. **RESULTS:** The analysis included 3,016 hospitals. In multivariate models, many hospital characteristics were significantly associated with the percent change in charges. Hospital type and census region were significantly related to percent change in charges. Specifically, Government and Non-Profit hospitals experienced smaller charge increases than Proprietary hospitals (-5.5% and -4.5% respectively, $p<0.0001$). Compared to the Northeast, the West, South, and Midwest experienced 5.5%, 4.4%, and 3.3% increases in charges on average ($p\leq0.001$), while the Midwest, West, and South were not statistically significantly different from each other ($p>0.05$). Also, a one-day increase in the average length of stay was associated with an average charge increase of 6.7% ($p<0.0001$). Overall, the final model accounted for 9% of the total variance. **CONCLUSIONS:** Hospital characteristics, such as the region and type, as well as changes to average length of stay between 2008 and 2011 were strong predictors of percent change in average charge for MJR. While several other factors were also statistically significantly related to change in charges for MJR, small effect sizes were not practically meaningful. The small percent of variance explained by the model leads us to conclude there are other factors not captured by Medicare data that are additionally responsible for growth in health care costs.

PMS80

HEALTH CARE UTILIZATION COSTS AND MEDICATION USE PATTERNS OF TUMOR NECROSIS FACTOR (TNF) INHIBITORS AMONG TEXAS MEDICAID PATIENTS DIAGNOSED WITH RHEUMATOID ARTHRITIS

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OBJECTIVES: To evaluate health care costs and medication use patterns (persistence, discontinuation and switching) in patients with rheumatoid arthritis (RA) on etanercept (ETN), infliximab (IFX) or adalimumab (ADA) in Texas Medicaid. **METHODS:** Prescription and medical claims for Texas Medicaid beneficiaries (18-63 years) with an RA diagnosis (ICD-9-CM code 714.0x) without claims for a biologic agent in the 6-months pre-index (July 1, 2003 to December 31, 2010) were analyzed over an 18-month study period between July 1, 2003 and August 31, 2011 (6-month pre- and 12-month post-index) based on their index biologic (ADA, ETN, or INF). The primary outcomes were 1-year persistence, discontinuation, switching and health care costs (RA-related and TNF inhibitor costs) to Texas Medicaid post-index, adjusted to 2011 US dollars using the medical consumer price index. Cohorts were constructed using propensity score (PS) matching controlling for baseline differences in demographics and clinical characteristics. **RESULTS:** After PS matching, 822 patients (n=274/biologic group) comprised the final sample. The mean age (±SD) was 48.9 (±9.8) years, and the majority (69.2%) were between age 45 and 63, Hispanic (53.7%) and female (88.0%). Post-index mean (±SD) total health care costs were $16,477 (±$9,228), RA-related costs were $13,713 (±$8,309) and TNF inhibitor costs were $12,195 (±$8,517). For each cost variable (total health care, RA-related and TNF inhibitor costs), costs incurred by patients on ETN were significantly lower ($p<0.01$) than those incurred by ADA patients but significantly higher ($p<0.01$) than those incurred by IFX patients. Persistence to index TNF inhibitor therapy and likelihood to switch or discontinue were comparable among groups. Duration of medication use (i.e. persistence) prior to switching or discontinuation of index therapy was also comparable among groups. **CONCLUSIONS:** The data suggest comparable medication use patterns but significantly different health care utilization costs among Texas Medicaid RA patients on ETN, IFX or ADA.

PMS83

UTILIZING NORDIC REGISTRIES TO SUPPORT HEALTH ECONOMICS RESEARCH IN RHEUMATIC DISEASES

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OBJECTIVES: Rheumatic diseases are often characterized by pain and disability. Many pharmaceuticals are available for their treatment and a considerable number of health economic(HE) studies have been published. Nordic countries maintain long-term comprehensive disease and drug registries. HE analyses, particularly those which are based on registry-data, can provide important information for health care decision makers. The primary objective of this study is to systematically review HE analyses of rheumatic diseases which utilize Nordic registry-data, and to provide a descriptive and critical analysis of this strategy. **METHODS:** Published literature was identified by searching the following databases: MEDLINE; EMBASE; Cochrane Library and Health Economic Evaluations Database; and PubMed. Search terms were pertinent to rheumatic diseases and HE. One reviewer screened and subsequently extracted data from studies which fulfilled inclusion/exclusion criteria. References and citation search was done on included studies. **RESULTS:** 45 HE studies utilized Nordic registry-data. Studies were relevant to Sweden(n=26), Norway(n=11), Finland(n=4) and Denmark(n=4). Study types were modeling(n=13), costing(n=8), work/productivity(n=6), quality-of-life(n=13), and a combination of HE outcomes(n=5). Registry data was used within the studies to characterize patients in regards to clinical(n=29), demographic(n=20), utility(n=18) and cost/